

Please replace the claims with the following:

1-15. (Cancelled)

16. (Previously Presented) A system for producing alloy wheels for motor vehicles, each wheel comprising a hub and a rim; the system comprising:  
a vertical lathe, which is configured for carrying out a machining finishing operation; and  
a control unit configured for:  
detecting an unbalance of said wheel;  
checking whether said unbalance falls within an unbalance acceptability value; and  
calculating a first simulated mass and a second simulated mass to be removed and a respective first simulated phase and second simulated phase with respect to a determined point on the wheel and as function of a mass of a valve and a phase of the valve;  
said unbalance being identified by the first and second simulated masses and by the first and second simulated phases;  
wherein the first and second simulated masses are separated from each other along the axle of the wheel.

17. (Previously Presented) The system of claim 16, wherein the vertical lathe is configured for checking the first and second simulated masses of the unbalance acceptability with respect to a first unbalance acceptability value and a second unbalance acceptability value.

18. (Previously Presented) The system of claim 17, wherein the vertical lathe is configured for removing said simulated masses from said wheel to compensate for the unbalance, when at least one of the first and the second masses is not lower than the respective first and second unbalance acceptability values.

19. (Previously Presented) The system of claim 18, wherein the vertical lathe comprises sensors for detecting the unbalance;

the control unit being configured for calculating a first coordinate and a second coordinate for said respective said first and second simulated masses; and

the vertical lathe further comprises a numerical control configured to acquire said coordinates, and being configured to carry out the machining finishing operation, to check the unbalance and remove the first and second simulated masses.

20. (Previously Presented) The system of claim 18, wherein the vertical lathe comprises sensors for dynamically detecting the unbalance and means for calculating the first and second masses in correspondence of a first plane and a second plane along an axis of said wheel.

21. (Previously Presented) The system of claim 18, wherein the control unit is configured for calculating the first and second simulated masses as function of the first and second masses and the first and second phases and the mass of the valve and the phase of the valve.

22. (Previously Presented) The system of claim 18, wherein the control unit is configured for calculating a first geometry and a second geometry of the respective first and second simulated masses as a function of a geometry of the wheel and a specific weight of the wheel.

23. (Previously Presented) The system of claim 22, wherein the control unit is configured for determining the first and second coordinates of said first and second geometries with respect to a point of reference on the wheel.

24-27. (Cancelled)